TANGIPAHOA/PONCHARTRAIN SHORE PROTECTION (PO-13)

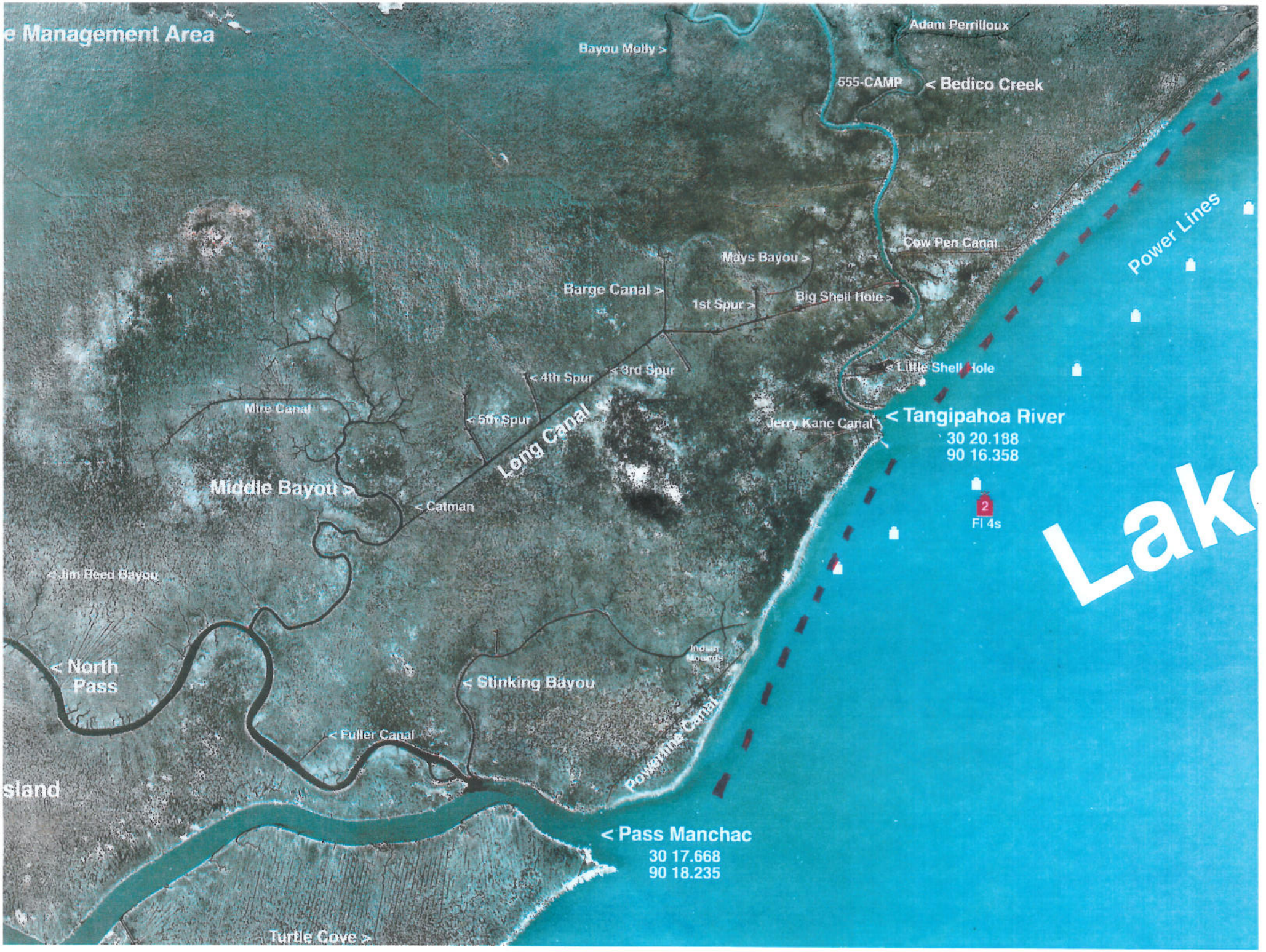
Candidate Project for the Eighth Priority List of the Coastal Wetlands Planning, Protection and Restoration Act

Candidate Project Information Sheet

Proposed by:

State of Louisiana
Tangipahoa Parish
February 26, 1998

Contact S. Gammill DNR/CRD (504) 342-7308


e Management Area
Bayou Molly >
Adam Perrilloux
555-CAMP
< Bedico Creek
Cow Pen Canal
Power Lines
Mays Bayou >
Barge Canal >
1st Spur >
Big Shell Hole >
< Little Shell Hole
< 4th Spur
< 3rd Spur
Mire Canal
< 5th Spur
Long Canal
Jerry Kane Canal
< Tangipahoa River
30 20.188
90 16.358
Middle Bayou >
< Catman
2
Fl 4s
Lak
< Jim Reed Bayou
< North Pass
< Stinking Bayou
Indian Mounds
< Fuller Canal
Pointe Canal
sland
< Pass Manchac
30 17.668
90 18.235
Turtle Cove >

LOCATION:

This 868 acre project area consisting of fresh/intermediate marsh and shallow lake bottoms is located in Tangipahoa Parish where the Tangipahoa River enters Lake Pontchartrain. The area contains approximately 723 acres of shall water. The area extends from the Tangipahoa /ST. Tammany Parish line to Pass Manchac on the south (see Figure 23 above and Figure 5 at end).

PROBLEMS AND OPPORTUNITIES:

The shoreline is eroding at a rate of about 5 feet per year for about 3 miles west of the river and about 10 feet per year for the 2.7 miles east of the river mouth. There is an area on the west side of Tangipahoa River where Stinking Bayou and the lake are approximately 15-20 feet from meeting. Once this happens it will destroy all the wildlife habatat for ducks, deer, and other fur bearing animals because of the salt water intrusion.

DESCRIPTION OF PROJECT FEATURES:

Limestone breakwaters wil be built in four feet of water about 1,000 feet offshore. These will be 1018 feet long, 21 feet wide at the base, and 3 feet wide at the crown. Approximately 30 segmented breakwater segments will be built 50 feet apart which will protect the 5.7 miles of shoreline. Approximately 31,500 feet of shoreline will be planted with giant cutgrass.

COSTS:

The project is estimated to cost $5,000,000.

BENEFITS:

The breakwater will protect 101 acres from erosion, will accrete three feet per year which will create an additional 41 acres of marsh, will allow SAV to cover an additional 464 acres, and will enhance 21 acres of marsh. Thus, a total of 627 acres of marsh will be benefitted over 20 years. The estimated cost per benefitted acre is $7,735. The project will be enhanced by the freshwater and nutrients provided by the Bonnet Carre Freshwater Diversion.

STATUS:

This project is part of the state of Louisiana Coastal Restoration Plan. It is also part of the CWPPRA Restoration Plan wil be a candidate for future Priority Lists.

KEY ISSUES:

The Breakwater will cover about 5 acres of water bottoms. The breakwater will not inhibit the ingress or egress of marine organisms into the adjacent wetlands. When the Tangipahoa River bar channel is dredged again, consideration will be given to placing the material behind the breakwater to create marsh.

SENATE

STATE OF LOUISIANA

"Serving the Citizens of the North and South Shores"

JOHN J. HAINKEL, JR.
State Senator
District 6
Tangipahoa
St. Tammany
Orleans
Jefferson

6069 Magazine Street
New Orleans, LA 70118
(504) 861-3730

110 N. Oak Street
Hammond, LA 70401
(504) 543-4990

COMMITTEES
Senate Finance, Chairman
Joint Legislative Committee on the Budget, Chairman
Insurance
Judiciary A
Labor & Industrial Relations

March 31, 1998

Col. William Conner
Department of the Army
United States Army Engineering District
Post Office Box 60267
New Orleans, LA 70160-0267

Dear Col. Conner:

It has come to my attention that the Tangipahoa/Pontchartrain Shore Protection Project, through the Breaux Act Task Force, has applied for inclusion in the Coastal Wetlands Planning, Protection and Restoration Act grant. I would like to take this opportunity to encourage your favorable consideration of the request.

This very important conservation project consists of building limestone breakers approximately 1,000 feet offshore to protect the 5.7 miles of shoreline on a 668-acre tract of fresh/intermediate marsh and shallow lake bottoms in the area where the Tangipahoa River enters Lake Pontchartrain. This area extends from the Tangipahoa/St. Tammany Parish line to Pass Manchac. The intent of the project is an effort to protect the wildlife habitat of ducks, deer and other creatures that will surely be destroyed due to salt water intrusion if action is not taken.

Please contact me if I can be of further assistance or you need additional information concerning the project. Again, I would appreciate your reviewing the project and hope that your decision will be to include it in the grant funding.

Sincerely,

John J. Hainkel, Jr.

jjHjr/mclp
c: Tangipahoa Parish Councilman Bobby Cortez

STATE OF LOUISIANA
HOUSE OF REPRESENTATIVES

HENRY "TANK" POWELL
District 73

423 S. Ninth Street
Ponchatoula, Louisiana 7045-
Telephone: (504) 386-4899
(800) 408-9763
Fax: (504) 386-0653

DONNA HOWE, Legislative Assist

Commerce
Education
Labor & Industrial Relations

April 2, 1998

COL WILLIAM CONNER
COASTAL WETLANDS PLANNING, PROTECTION
AND RESTORATION ACT
DEPARTMENT OF THE ARMY
UNITED STATES ARMY ENGINEER DISTRICT
NEW ORLEANS CORP OF ENGINEERS
PO BOX 60267
NEW ORLEANS LA 70160-0267

Dear Col. Conner:

Enclosed is a copy of the resolution passed by the Tangipahoa Parish Council requesting that Coastal Wetlands Planning, Protection and Restoration Act include the Tangipahoa/Ponchartrain Shore Protection Project on the Property Project List to be accepted and funded. Please consider this my strongest recommendation for this project. I am very much interested in getting this project funded for the betterment of Tangipahoa Parish.

Your consideration of this project is appreciated. If I can be of further help in this matter, please call.

Your Friend,

Tank

TANK POWELL
State Representative
District 73

TP/dh

Enclosure

T. P. RESOLUTION NO. 98-10

WHEREAS, there is a 868 acre proposed project area consisting of fresh/intermediate marsh and shallow lake bottoms located in Tangipahoa Parish where the Tangipahoa River enters Lake Pontchartrain. The area contains approximately 723 acres of shallow water. The area extends from the Tangipahoa/St. Tammany Parish line to Pass Manchac on the south; and

WHEREAS, the shoreline is eroding at a rate of about 5' per year for about 3 miles west of the river and about 10 feet per year for the 2.7 miles east of the river mouth. There is an area on the west side of Tangipahoa River where Stinking Bayou and the lake are approximately 15-20 feet from meeting. Once this happens it will destroy all the wildlife habitat for ducks, deer and other fur bearing animals of the salt water intrusion; and

WHEREAS, limestone breakwaters can be built in four feet of water about 1,000 feet offshore to protect the 5.7 miles of shoreline at a proposed cost of $5,000,000; and

WHEREAS, the Breaux Act Task Force under the grant called **"COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT"** has applied for monies for said proposed project.

THEREFORE BE IT RESOLVED by the Tangipahoa Parish Council, governing authority of Tangipahoa Parish, State of Louisiana, hereby requests that COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT include the Tangipahoa/Pontchartrain Shore Protection Project on the PPL (Property Project List) be accepted and funded.

BE IT FURTHER RESOLVED that an executed and certified copy of this resolution be forwarded to Colonial William Conner, Coastal Wetlands Planning, Protection and Restoration Act, Department of the Army; United States Army Engineer District, New Orleans Corp of Engineers, P. O. Box 60267, CEMVN-PD-FE, New Orleans, LA 70160-0267.

On motion by Mr. Cortez and seconded by Mr. Holton, the foregoing resolution was hereby declared adopted on this 23rd day of March, 1998 by the following roll-call vote:

YEAS: 9 (Buckley, Jarrell, Petitto, Bruno, Ridgel, Bankston, Holton, Edwards, Cortez)

NAYS: NONE

ABSENT: NONE

NOT VOTING: 1 (Fleet)

ATTEST:

Margie Allen
Clerk of Council
Tangipahoa Parish Council

George Holton
Chairman
Tangipahoa Parish Council

Gordon A. Burgess, President
Tangipahoa Parish

SEAL

T. P. RESOLUTION NO. R02-06

WHEREAS, there is a 868 acre proposed project area consisting of fresh/intermediate marsh and shallow lake bottoms located in Tangipahoa Parish where the Tangipahoa River enters Lake Pontchartrain The area contains approximately 723 acres of shallow water. The area extends from the Tangipahoa/St Tammany Parish line to Pass Manchac on the south; and

WHEREAS, the shoreline is eroding at a rate of about 5' per year for about 3 miles west of the rive and about 10 feet per year for the 2.7 miles east of the river mouth. There is an area on the west side o Tangipahoa River where Stinking Bayou and the lake are approximately 15-20 feet from meeting. Once thi happens it will destroy all the wildlife habitat for ducks, deer and other fur bearing animals of the salt wate intrusion; and

WHEREAS, limestone breakwaters can be built in four feet of water about 1,000 feet offshore t protect the 5.7 miles of shoreline at a proposed cost of $5,000,000; and

WHEREAS, the Breaux Act Task Force under the grant called **"COASTAL WETLAND PLANNING, PROTECTION AND RESTORATION ACT"** has applied for monies for said propose project.

THEREFORE BE IT RESOLVED by the Tangipahoa Parish Council, governing authority Tangipahoa Parish, State of Louisiana, hereby requests that COASTAL WETLANDS PLANNIN PROTECTION AND RESTORATION ACT include the Tangipahoa/Pontchartrain Shore Protection Proje on the PPL (Property Project List) be accepted and funded.

BE IT FURTHER RESOLVED that an executed and certified copy of this resolution be forward to Colonial William Conner, Coastal Wetlands Planning, Protection and Restoration Act, Department of t Army; United States Army Engineer District, New Orleans Corp of Engineers, P. O. Box 60267, CEMV PD-FE, New Orleans, LA 70160-0267.

On motion by Mr. Cortez and seconded by Mr. Bruno, the foregoi resolution was hereby declared adopted on this 11th day of February, 2002 by the following roll-call vo

YEAS: 7 (Faust, Bruno, Ridgel, Bankston, Notariano, Edwards, Cortez)

NAYS: NONE

ABSENT: 1 (Fleet)

NOT VOTING: 2 (Buckley, Petitto)

ATTEST:

Margie Allen
Clerk of Council
Tangipahoa Parish Council

Debbie Edwards
Chairman
Tangipahoa Parish Council

Gordon A. Burgess, President
Tangipahoa Parish

SEAL

SCANS —

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
805 W. OAK ST
ROOM 1
AMITE, LA 70422
(504) 748-8620

June 27, 1996

Faye Talbot
Natural Resources Conservation Service
FOPSS Office
3470 NE Evangeline Thruway
Lafayette, LA 70507-2554

Faye,

Enclosed you will find the project that Pete Jones is interested in submitting for the 6th year CWPPRA list that I spoke to you about recently. The site is located in Tangipahoa Parish and is a shore protection project along the Lake Pontchartrain shoreline. It was originally submitted from the state restoration plan.

I agree with the description from the state plan with the exception of the following:

(1) The shoreline erosion rate west of the Tangipahoa River appears to be much greater (15-20 ft/year) than what is described in the plan. This was attained by comparing 1980 and 1989 aerial photographs. I have drawn in the 1989 shoreline on the enclosed quad map.

(2) As one of the project features included in the plan, California bullwhip could be substituted in place of Giant cutgrass.

If it is possible, please prepare an overlay of the location for Pete or another representative to present at the upcoming 6th year CWPPRA meeting to be held at the Corps meeting room on July 9th. Send to the following address:

Mr. Larry 'Pete' Jones
138 Edna Lafrance Rd.
Braithwaite, LA 70040

Pete has been notified as to the date and time of the meeting and that a Tangipahoa Parish official or a letter from the Parish Council in support of the project would be beneficial.

John E. Boatman
John E. Boatman
Soil Conservatioist

enclosures

Coastal Wetlands Planning, Protection and Restoration Act
PO-13 Tangipahoa/Ponchartrain Shore Protection
Project Information Sheet

Project Name: Tangipahoa/Ponchartrain Shore Protection
Submitted By: State of Louisiana
Project Area Size: 868 ac. total (145 ac. swamp, 723 ac. water)
Prepared by: Steven Gammill 12/22/92

Project Description:

This project calls for the protection of 145 acres of freshwater Cypress swamp through the construction of a segmented rock breakwater. The objective is to halt rapid shoreline erosion and scouring of highly organic swamp soils consisting mainly of Maurpas muck. The lake is very shallow and bottom sediments have high mineral content indicating that this area has high potential for restoration vegetative plantings. Segmented breakwaters will promote sediment deposition and accretion while vegetative plantings will reduce near shore erosion and increase overall biological productivity in the area and improving habitat for fisheries and waterfowl. Fertilization during the first year after planting will be required. Structural components of the plan include:

1. Install approximately 30 rock dikes 3' high with base dimensions 1018'L x 21'W with 3:1 slopes such that the crow dimensions will be 1000'L X 3'W. Estimate 43,540 cu. yds. of lime stone rip-rap will be required. Dikes will be spaced with a 50' gap between the bases.

3. Plant 31,474' of shoreline with sprigs of *Zizaniopsis miliacea* in two staggered rows 5' apart on 5' centers. This will require approximately 12,600 plants. Fertilizing will be required during the first year.

Present Conditions:

1. Acres of vegetated marsh and listing of most common plant species present.

   Based on long-term erosion rates, 145 acres of swamp will be lost over twenty years. This accounts for 17% of the project area.

Marsh species common to the area observed during field investigation:

Swamp

30%	*Taxodium distichum*	Baldcypress
15%	*Quercus virginiana*	Live oak
10%	*Acer rubrum*	Swamp red maple
10%	*Salix nigra*	Black willow
10%	*Alternanthera philoxeroides*	Alligatorweed
5%	*Nyssa sylvatica*	Swamp tupelo
5%	*Quercus nigra*	Water oak
5%	*Sabal minor*	Dwarf palmetto

5%	*Celtus laevigulata*	Hackberry
5%	*Iris* spp.	Iris
Tr.	*Zizaniopsis miliacea*	Giant cutgrass
Tr.	*Cladium jamaicense*	Sawgrass

2. Acres of open water:

   723 acres (83% of the project area) of open water exists at the present. This includes all open water extending 1000' out from the existing shoreline.

3. Percent of open water area listed in Item #2 dominated by aquatic plants ($\geq$ 50% canopy cover).

   0%

4. Historical information on marsh loss trends (provide references, if available, or methods used to derive information given).

   COE land loss data:

1932 to 1958 (%/yr.)	1958 to 1974 (%/yr.)	1974 to 1983 (%/yr.)	1983 to 1990 (%/yr.)
0.162	0.814	0.274	0.203

5. Brief summary of significant historical hydrologic changes.

   This area has been extensively logged for cypress and although replanted, much of the former dense cypress swamp has converted to fresh marsh with a sparse cypress overstory.

   Increased salinity events in Lake Ponchartrain may also be responsible for reduced cypress regeneration.

6. Shoreline erosion rate (provide source if available).

   Digitized data using May and Britsch 1:15,000 land loss maps indicate long-term average annual erosion rates of 13.8'/yr. on the lake shore south of the river and 6'/yr. north of the river.

7. Percent of open water area $\leq$ 1.5 feet in depth (relative to marsh surface)

   80%

8. Available historical salinity data, including period of record, sampling location(s) in relation to project area.

   Historical salinity data is not available for this marsh. The Ponchartrain Basin Planning summary indicates a mean annual salinity of less than 2 ppt. for this area. In reality, I think that this number is too high and a salinity of 1 ppt. is more representative of the average high salinity.

9. Location, type and operation schedule (if applicable) of existing permitted and unpermitted structures.

   Nothing remarkable.

10. If there is an existing management plan for the area, is it permitted? Provide copy of permitted operational schedule scheme and permit number.

    No plan exist at the present.

11. Location of structures, culverts, breaks in spoil banks, etc. that serve as hydrologic connections and are not identified above or are not easily seen by examination of aerial photography.

    Nothing remarkable.

12. Estimated subsidence rate (provide reference if available).

    Subsidence rates reported by Penland et al. 1989 indicate a subsidence rate of 0.21 cm./yr or 0.082 in./yr. at the Mandeville station. Basin planning summaries indicate a subsidence rate of 0.39 cm/yr. along NW Lake Ponchartrain. This equals about 3 inches over 20 years.

Future Conditions

1. Location, type, and operation of proposed structures and water control systems including plugs.

   See project description and attached plats.

2. Proposed hydrologic changes (water introductions, circulation routes, etc.) due to the project.

   No hydrologic changes are proposed.

3. Project benefits.

   The benefits listed below should reflect the net benefits attributable to the project for the 20 year analysis period.

   a-1. Acres of emergent wetland predicted to be gained/lost without project.

   The principal cause of wetland loss in the area is shoreline erosion. Erosion is slower on the lake shore north of the Tangipahoa than on the south side.

   TY 0: 0 ac. lost leaving **145** ac. or **17%** of the project area covered with swamp.
   TY 1: 7 ac. lost leaving **138** ac. or **16%** of the project area covered with swamp
   TY 20: 145 ac. lost, leaving **0** ac. or **0%** of the project area covered with swamp.

1a. Shoreline loss at TY 20 on the lake shore south of the river:
((16217' shoreline x 13.8'/yr. erosion)/43,560) x 20 yrs. = - 103 ac.

1b. Shoreline loss at TY 20 on the lake shore north of the river:
((15,257' shoreline x 6.0'/yr. erosion)/43,560) x 20 yrs. = - 42 ac.
Total: **- 145 ac.**

a-2. Acres of emergent wetland predicted to be gained/lost with the project.

To date, limestone breakwaters have not been used to restore shorelines or retard erosion on Lake Ponchartrain. It is therefore difficult to predict what beneficial effect they will have on the shoreline. Preliminary projections anticipate an average accretion of 3'/yr. feet along the entire shoreline. Shoreline erosion will be halted. Vegetative plantings in conjunction with accretion from the breakwaters is expected to expand from 5' at TY 1 to 65' wide at TY 20.

TY 1: 2 ac. gained leaving 147 ac. or 17% of the project area covered with emergent wetland.
TY 20: 45 ac. gained, leaving 190 ac. or 22% of the project area covered with emergent wetland.

1a. Shoreline accretion at TY 20 on the lake shore south of the river:
(assuming an immediate gain of marsh 5' wide immediately after planting)
(((5' wide planting x 16,217' shoreline)/43560) +
(3'/yr. expansion x 16,217 shoreline)/43560) x 19 yrs.) = 23 ac.

1b. Shoreline accretion at TY 20 on the lake shore north of the river:
(assuming an immediate gain of marsh 5' wide immediately after planting)
(((5' wide planting x 15,257' shoreline)/43560) +
(3'/yr. expansion x 15,257 shoreline)/43560) x 19 yrs.) = 22 ac.
Total: **- 45 ac.**

SUMMARY

Total acres of wetland lost without the project:	= - 145 ac.
Total acres of wetland gained with the project:	= + 45 ac.
Net benefit:	**= 190 ac.**

b-1. Percent of open water area dominated by aquatic vegetation predicted to be present at the end of 20 years without the project.

0% assuming that conditions will not change in the existing shallow water areas.

b-2. Percent of open water area dominated by aquatic vegetation predicted to be present at the end of 20 years with the project.

40% assuming that reduced turbidity and current will result in colonization of submerged aquatic species such as *Vallisneria americana* on the shallow sandy bottoms.

4. Predicted plant species composition of marsh for future-with-project and future-without-project (general, in terms of dominant species).

With the project in place plant composition should reflect an increase in *Zizaniopsis miliacea* from the plantings.

Without the project species composition is not expected to change landward of the project area. The project area itself is projected to be lost to erosion.

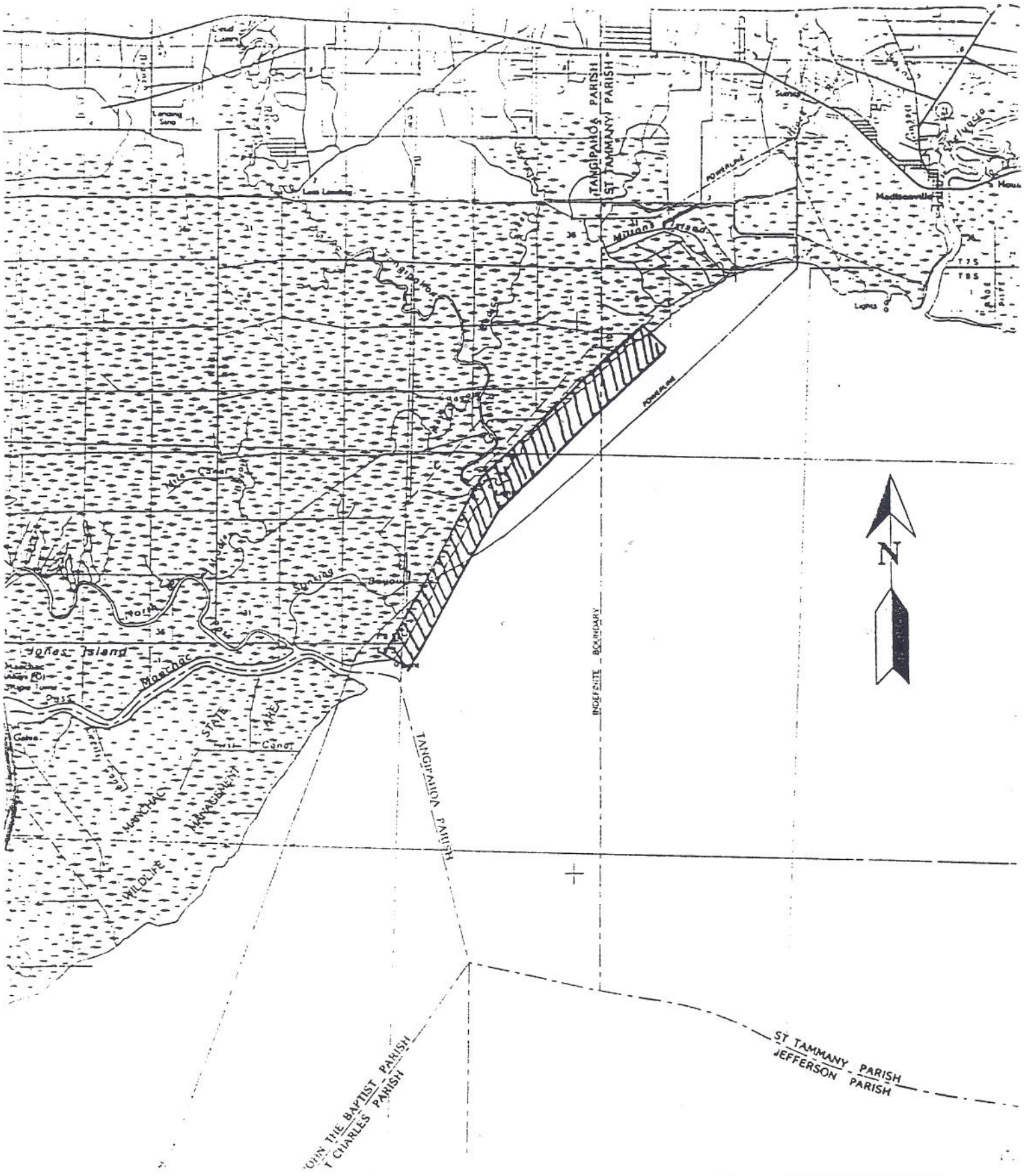
5. Estimate of open water depth ($\leq$ 1.5 ft) in relation to marsh surface for future with project and future without project scenarios.

Percentage of open water less than 1.5 ft. deep:

Intermediate Marsh	With Project (%)	Without Project (%)
$\geq$ 1.5 ft. deep	90%	80%

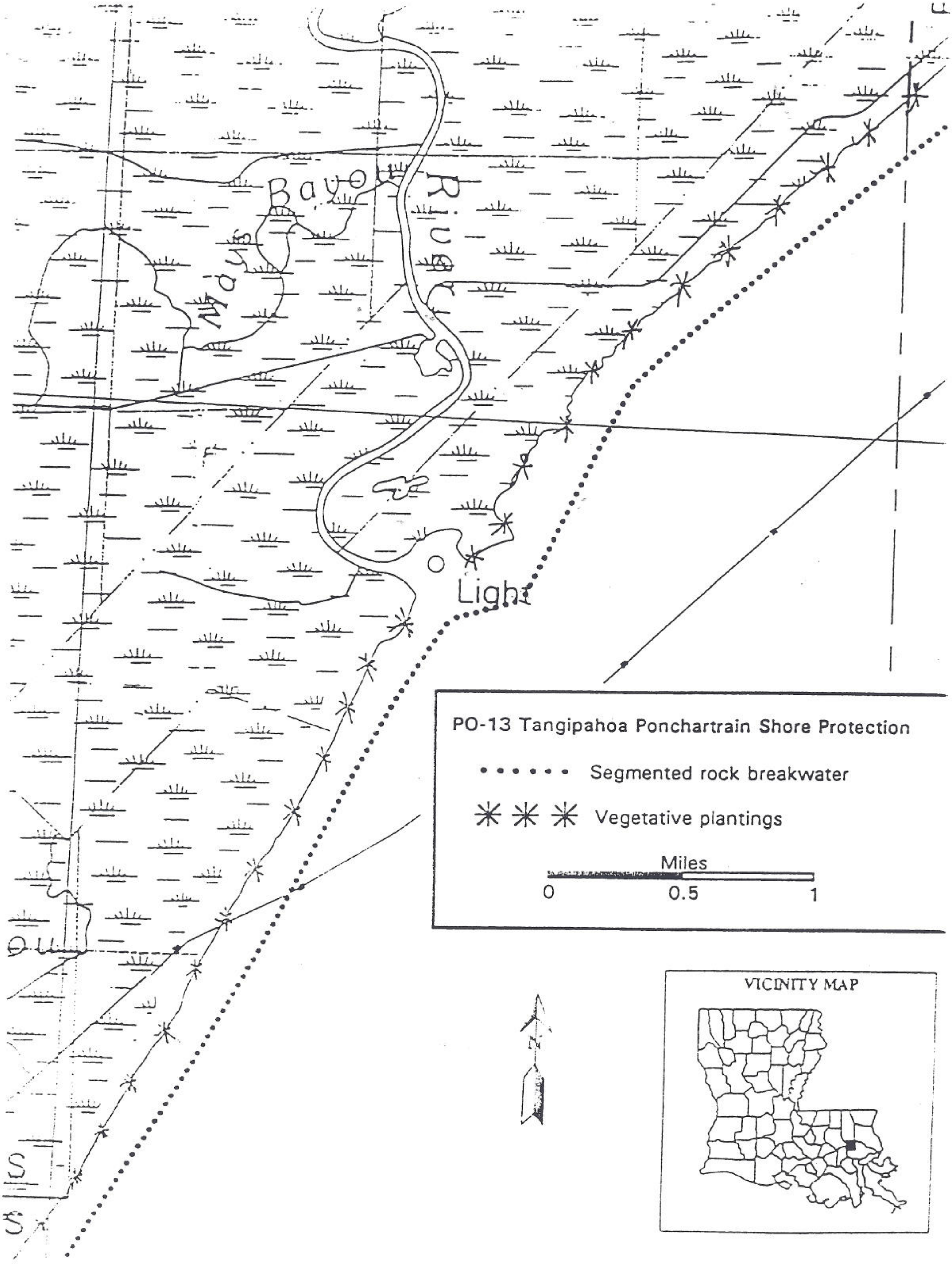
9. Predicted salinities, future-with and future-without project.

Swamp	With Project (ppt.)	Without Project (ppt.)
Mean high salinity	1	1

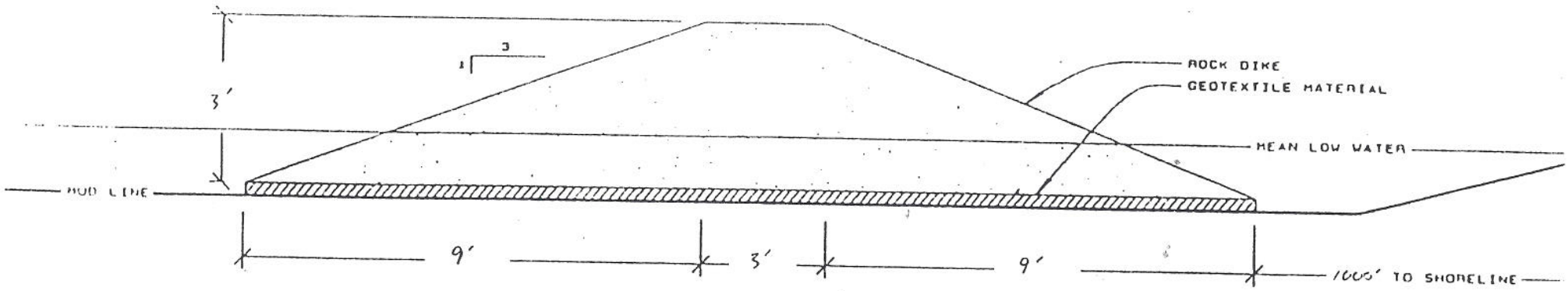


PO-13 Tangipahoa/Ponchartrain Shore Protection

Project Area



Light
PO-13 Tangipahoa Ponchartrain Shore Protection
Segmented rock breakwater
Vegetative plantings
Miles
0
0.5
1
VICINITY MAP



ROCK DIKE CROSS-SECTION

CONCEPT PLAN ONLY - NOT FOR CONSTRUCTION

NOT TO SCALE

LOUISIANA COASTAL WETLANDS RESTORATION PLAN

PONTCHARTRAIN BASIN
APPENDIX A

PREPARED BY:

LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE

June 1993